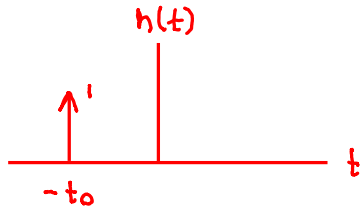


**Example 4.11.** Consider the LTI system with impulse response  $h$  given by

$$h(t) = \delta(t + t_0),$$

where  $t_0$  is a  $t_0 > 0$  strictly positive real constant. Determine whether this system is causal.

*Solution.* From the definition of  $\delta$ , we can easily deduce that  $h(t) = 0$  except at  $t = -t_0$ . Since  $-t_0 < 0$ , the system is not causal. ■



causal :  $h(t) = 0$  for all  $t < 0$